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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,476	02/12/2004	Allan Wirth	108-205USA000	2325

7590 01/10/2007

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EXAMINER	
CURS, NATHAN M	
ART UNIT	PAPER NUMBER
2613	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/777,476	WIRTH ET AL.	
	Examiner	Art Unit	
	Nathan Curs	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the blackened areas of several of the figures makes the drawings difficult to read. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

2. Figures 1A-1I should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 17, 20, 23, 26, 29 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 17, 20, 23, 26, 29 and 32 recite the limitation "supporting signal transmission and reception channels" and claims 17, 20 and 23 also recite the limitation "supporting a free-space optical laser communication system". The term "supporting" is ambiguous in the method claims; it's not clear if the subsequent limitations are being provided or not.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 17-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Cicchiello et al. ("Cicchiello") (US Patent Application Publication No. 2005/0069325).

Regarding claim 17, Cicchiello discloses a method of automatically stabilizing variations in the intensity of received laser beam carrier signals caused by atmospheric turbulence along the signal reception channels of a free-space optical laser communication system providing signal transmission and reception channels (fig. 1 and paragraphs 0014-0018), said method comprising: (a) providing a free-space optical laser communication system having signal transmission and reception channels along which variations in the intensity of laser beam carrier signals are caused by atmospheric turbulence (fig. 1 and paragraphs 0014-0018); and (b) providing a laser beam speckle tracking (i.e. following) mechanism along said signal reception channel to achieve stabilization in the intensity of the laser beam carrier signal received and

detected at the signal detector of said signal reception channel (fig. 3 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing).

Regarding claim 18, Cicchiello discloses the method of claim 17, wherein said signal transmission and reception channels are optically-separated (fig. 2, elements 35 and 37).

Regarding claim 19, Cicchiello discloses the method of claim 17, wherein said signal transmission and reception channels are optically-combined (paragraph 0045).

Regarding claim 20, Cicchiello discloses a method of automatically stabilizing variations in the intensity of received laser beam carrier signals caused by atmospheric turbulence along the signal reception channels of a free-space optical laser communication system providing signal transmission and reception channels (fig. 1 and paragraphs 0014-0018), said method comprising: (a) providing a free-space optical laser communication system having signal transmission and reception channels along which variations in the intensity of laser beam carrier signals are caused by atmospheric turbulence (fig. 1 and paragraphs 0014-0018); and (c) providing a speckle-to-fiber/detector locking mechanism along said signal reception channel to achieve stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 4, element 48 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing).

Regarding claim 21, Cicchiello disclose the method of claim 20, wherein said signal transmission and reception channels are optically-separated (fig. 2, elements 35 and 37).

Regarding claim 22, Cicchiello discloses the method of claim 20, wherein said signal transmission and reception channels are optically-combined (paragraph 0045).

Regarding claim 23, Cicchiello discloses a method of automatically stabilizing variations in the intensity of received laser beam carrier signals caused by atmospheric turbulence along the signal reception channels of a free-space optical laser communication system providing

signal transmission and reception channels (fig. 1 and paragraphs 0014-0018), said method comprising: (a) providing a free-space optical laser communication system having signal transmission and reception channels along which variations in the intensity of laser beam carrier signals are caused by atmospheric turbulence (fig. 1 and paragraphs 0014-0018); (d) providing a laser beam speckle tracking (i.e. following) mechanism along said signal reception channel to achieve a first level of stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 3 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing); and (e) providing a speckle-to-fiber/detector locking mechanism along said signal reception channel to achieve a second level of stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 4, element 48 and paragraphs 0049-0053).

Regarding claim 24, Cicchiello discloses the method of claim 23, wherein said signal transmission and reception channels are optically-separated (fig. 2, elements 35 and 37).

Regarding claim 25, Cicchiello discloses the method of claim 23, wherein said signal transmission and reception channels are optically-combined (paragraph 0045).

Regarding claim 26, Cicchiello discloses apparatus for automatically stabilizing variations in the intensity of received laser beam carrier signals caused by atmospheric turbulence along the signal reception channels of a free-space optical laser communication system providing signal transmission and reception channels (fig. 1 and paragraphs 0014-0018), said apparatus comprising: a free-space optical laser communication system having signal transmission and reception channels along which variations in the intensity of laser beam carrier signals are caused by atmospheric turbulence (fig. 1 and paragraphs 0014-0018); and a laser beam speckle tracking (i.e. following) mechanism along said signal reception channel to

achieve stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 3 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing).

Regarding claim 27, Cicchiello discloses, the apparatus of claim 26, wherein said signal transmission and reception channels are optically-separated (fig. 2, elements 35 and 37).

Regarding claim 28, Cicchiello discloses the apparatus of claim 26, wherein said signal transmission and reception channels are optically-combined (paragraph 0045).

Regarding claim 29, Cicchiello discloses apparatus for automatically stabilizing variations in the intensity of received laser beam carrier signals caused by atmospheric turbulence along the signal reception channels of a free -space optical laser communication system providing signal transmission and reception channels (fig. 1 and paragraphs 0014-0018), said apparatus comprising: a free -space optical laser communication system having signal transmission and reception channels along which variations in the intensity of laser beam carrier signals are caused by atmospheric turbulence (fig. 1 and paragraphs 0014-0018); and a speckle-to-fiber/detector locking mechanism along said signal reception channel to achieve stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 4, element 48 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing).

Regarding claim 30, Cicchiello discloses the apparatus of claim 29, wherein said signal transmission and reception channels are optically-separated (fig. 2, elements 35 and 37).

Regarding claim 31, Cicchiello discloses the apparatus of claim 29, wherein said signal transmission and reception channels are optically-combined (paragraph 0045).

Regarding claim 32, Cicchiello discloses apparatus for automatically stabilizing variations in the intensity of received laser beam carrier signals caused by atmospheric

turbulence along the signal reception channels of a free-space optical laser communication system providing signal transmission and reception channels (fig. 1 and paragraphs 0014-0018), said apparatus comprising: a free -space optical laser communication system having signal transmission and reception channels along which variations in the intensity of laser beam carrier signals are caused by atmospheric turbulence (fig. 1 and paragraphs 0014-0018); a laser beam speckle tracking (i.e. following) mechanism along said signal reception channel to achieve a first level of stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 3 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing); and a speckle-to-fiber/detector locking mechanism along said signal reception channel to achieve a second level of stabilization in the intensity of the laser beam carrier signal received and detected at the signal detector of said signal reception channel (fig. 4, element 48 and paragraphs 0049-0053, where the disclosed "curvature sensing" is a form of speckle sensing).

Regarding claim 33, Cicchiello discloses the apparatus of claim 32, wherein said signal transmission and reception channels are optically-separated (fig. 2, elements 35 and 37).

Regarding claim 34, Cicchiello discloses the apparatus of claim 32, wherein said signal transmission and reception channels are optically-combined (paragraph 0045).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- US Patent No. 4123651 – discloses speckle tracking between two optical free space transmission nodes.

- US Patent No. 5689335 – discloses that atmospheric turbulence causes speckles in free space optical transmission signals.
- US Patent Application Publication No. 2003/0067657 – discloses a free space optical transmission system that compensates for atmospheric effects using a wavefront sensor.

8. Any inquiry concerning this communication from the examiner should be directed to N. Curs whose telephone number is (571) 272-3028. The examiner can normally be reached on M-F (from 9 AM to 5 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached at (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (800) 786-9199.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pairdirect.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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